Amendments to the Specification:

To the Title:

Please amend the Title as follows:

~~"Digital Camera and Lens System and Method"~~

"System and Method for Modeling a Digitally Simulated Camera and Lens"

To the Specification:

Please replace the paragraph that begins on page 17, line 29, with the following paragraph:

A more detailed flow diagram of the processes utilized in one embodiment of the present invention is illustrated in Figure 6a. Figure 6b is a table presenting a number of the variables that will be referenced in the following discussion. Referring to Figure 6a, the input consists of focus 605, focal length 610, aspect ratio and aperture values 615, infinity setting 620, f-stop and circle of confusion 625. Utilizing the focus 605, focal length 610, the true focal length 630 is determined. The true focal length may subsequently be reflected as a number provided to a user holding a field device, such as a handheld device, or graphically presented to the user as will be shown below. To determine the true focal length, a computation or a look-up table may be used, block 635. In one embodiment, the calculation is as follows:

$$TFL = FL + FL^2/(Focus-FL),$$

where the TFL represents the true focal length, FL represents the focal length input and focus is the Focus value input.

Please replace the paragraph that begins on page 18, line 13, with the following paragraph:

Using mathematical equations may be sufficient for some simple lenses. However, very complex lenses, lenses that are of special design, or even lenses that are out of alignment or unstable may require a measurement and mapping of basic lens properties from which look-up tables may be generated. This may occur, for example, when a particular type of lens and camera combination is required or some photography has been already shot with a particular type of lens in camera that was not in perfect condition. Furthermore, it is fairly common for the markings on a lens to be slightly off. For instance, the marks to indicate focus setting on a lens can be off by enough to cause an object to be out of focus if one were to only go on the lens markings and not look through the viewfinder. Even some lenses that are considered in "perfect" functioning condition simply do not operate according to the normal optical equations. There are a number of lenses, particularly zoom lenses and those designed for microscopic or macroscopic whose design is fundamentally non-linear. In these cases, changing lens attributes such as focus or the focal length (on a zoom lens) have unpredictable results. Thus, some mechanism needs to exist to adjust the recorded values so the values

C2

correspond to the true optical properties of the lens. A look-up ~~table~~ table, for example lookup table 637, provides a mechanism for incorporating those lens peculiarities into the invention's calculations to correct for these abnormalities.

Please replace the paragraph that begins on page 20, line 1, with the following paragraph:

Thus, in one embodiment, the following computation is performed to determine the correct horizontal and vertical field of view.

C3

Vfov = 2 tan^{-1} ((Ap/Ar) / (2 * TFL)) ~~2*(atan(Ap/Ar)/2,FL))~~

Hfov = 2 tan^{-1} (Ap / (2 * TFL)) ~~2*(atan(Ap/2,FL))~~

Where Vfov represents the vertical field of view, Hfov represents the horizontal field of view, atan represents an arctangent function, Ap represents the aperture size, Ar represents the aspect ratio and ~~FL~~ TFL represents the true focal length.

Please delete the paragraph that begins on page 20, ~~line~~ 15, and ends at page 20, line 20.

Please replace the paragraph that begins on page 21, line 1, with the following paragraph:

C4

The focus 605 and true focal length are also used to determine three dimensional markers, such as scale and position 650, with respect to displayed image and lens characteristics. The hyper focal distance 660 also is used. ~~In one embodiment, the markers are placed in accordance with the following equation:~~

~~Marker Pos = (TFL/2.54)/Ar~~
